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The Relationship between Parental Stress, Cognitive Distortions, and Child Psychopathology

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THE RELATIONSHIP BETWEEN PARENTAL STRESS, COGNITIVE DISTORTIONS, AND CHILD PSYCHOPATHOLOGY

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Dissertation Approval

This is to certify that the thesis presented to us by Daniel Kennedy on the 27 day of October, 2011, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

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Abstract

While there are a number of factors that may contribute to maladaptive parenting behaviors, parental stress has consistently been related to the increased risk of child maltreatment and, ultimately, the development of childhood. The question then is what drives parental stress and what are those key factors? Based on previous research, there are multiple parental, child, and environmental factors that lead to parental stress, but there is not a clear understanding of what initially drives parental stress. Based on cognitive behavioral models of stress and Abidin's theory of parental stress, it is theorized that parental cognitions play an important role in the development of parental stress. Theoretically, distorted thinking influences the development of parental stress, which in turn increases the likelihood that the parent or caregiver will engage in maladaptive parenting behaviors. Increased maladaptive parenting behaviors then lead to child psychopathology.

The main purpose of the present study was to examine the relationship between cognitive distortions, parental stress, and perceived levels of child psychopathology and to have a better understanding of the initial pathway of parental stress. Specifically, the purpose was to determine if parental stress mediates the relationship between cognitive distortions and child psychopathology. The results of this study indicate that parental stress mediates the relationship between parental distorted thinking and child psychopathology, therefore providing empirical support for cognitive behavioral models of parental stress and parenting behaviors. The second goal of the study was to further test the hypothesis that specific parenting factors, such as depressive symptoms and perception of competency in parenting abilities, are associated with distorted thinking.

Results indicate that distorted thinking is strongly associated with depressive symptoms and levels of perceived competency, which is consistent with previous research in both parent and nonparent populations.

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Chapter 1

Introduction

Statement of the problem.

Understanding the factors that influence parenting behaviors has been an interest of psychologists and researchers for the last 50 years. While there are a number of factors that may contribute to maladaptive parenting behaviors, parental stress has consistently been related to the increased risk of child maltreatment and, ultimately, the development of childhood psychological and behavioral disorders (Abidin, 1992). Parenting stress can result from a plethora of factors that are typically divided into three basic categories: parental factors, child factors and life stressors. Previous research has identified several parental factors that may interfere with the parent-child relationship and increase the risk for parental stress: low confidence in parenting abilities, low perceived attachment with child, health problems, role restriction (i.e., the level at which the parental role is restricting their freedom and their ability to maintain their own identity), depression, anxiety, and spouse involvement (i.e., level of emotional and active support from co parent) (Abidin, 1990). Less attention, however, has been directed towards an understanding of how parental cognitions may exacerbate or ameliorate parental stress.

Despite the fact that there is strong evidence that distorted thinking plays a significant role in the development of general stress and other psychological problems (Lazarus & Folkman, 1984; Beck, 1976), less attention has been given to the role parental cognitions play in parental stress. Abidin (1990) previously made reference to the importance of how parental beliefs about themselves and the world play significant roles in the development of parental stress, but this has been rarely tested empirically

compared to other parental factors. Further investigation of the relationship between parental cognitions and parental stress may help researchers better understand the initial pathway of parental stress. Better understanding of the factors that contribute to parental stress could possibly lead to improved treatment and interventions for parental stress, which, in turn, could reduce or prevent child maltreatment and subsequent child behavioral problems.

Purpose of the study.

The main purpose of the present study was to examine the relationship between cognitive distortions, parental stress, and perceived child psychopathology. Specifically, the purpose of the study was to test the hypothesis that parental cognitive factors, such as cognitive distortions are strongly associated with parental stress, which, in turn leads to increased utilization of maladaptive parenting behaviors. Maladaptive parenting behaviors then are associated with increases in child psychopathology. It was hypothesized that parental stress would be a mediator between cognitive distortions and measures of child psychopathology. The hypothesis is consistent with Abidin's (1990) theory of parental stress and the pathway between parental stress and perceived child psychopathology.

An additional purpose of the study was to investigate the relationship between cognitive distortions and specific parent factors, such as perceived competency and depressive symptoms. There is extensive research citing the major role that distorted thinking plays in the development of Axis I pathology, in particular depressive disorders, but there is not extensive research within a parent population (Rosenfield, 2002). Furthermore, previous research in the area of parental stress and child maltreatment has

suggested that parents with high levels of distorted thinking lack confidence or competence in their abilities to control their children's behaviors effectively, hence this hypothesis needs to be further explored. Cognitive theory explicitly states that distorted thinking has a negative effect on competence and locus of control (Beck, 1979).

Relevance to cognitive behavioral therapy.

Understanding the underlying cognitive factors (cognitive distortions) that contribute to parental stress will ultimately lead to better psychological treatment of the parents who are at risk of engaging in child maltreatment or dysfunctional parenting behaviors. Furthermore, identifying common cognitive distortions that are present in the population may result in stronger empirically based cognitive behavioral interventions for parents with high levels of parental stress. If there a strong relationship were identified between cognitive distortions and parental stress as hypothesized, this would indicate that cognitive behavioral treatment protocols should put a greater emphasis on challenging and modifying parent's distorted thinking. Current cognitive behavioral interventions for parents with a history of or at risk for child maltreatment or dysfunctional parenting behaviors place a significantly greater empathize on the behavioral component of treatment (modeling, psycho education, etc.) and typically, the cognitions of the parent are overlooked or not addressed at all.

Chapter 2

Literature Review

Overview.

There has been growing interest over the past 50 years in understanding the factors that influence parenting behaviors. The interest in the area of parenting behaviors has grown dramatically given the increased prevalence and epidemic of child maltreatment in the United States (National Statistics on Child Abuse and Neglect, 2007; Walrath et al, 2006). Interest has also grown due to studies indicating the role that parenting behaviors, in particular maladaptive parenting behaviors, have on child development and child psychopathology. Previous researchers have demonstrated that dysfunctional parenting behaviors are influenced by a multitude of psychological, sociological, and environmental factors. However, due to the complexity of the factors that influence parenting, there are few models of parenting behaviors that tie together the interplay between psychological, sociological, and environmental factors.

Abidin (1992) was one of the first researchers to develop the transactional model of parenting behaviors that describes the interplay between psychological, sociological, and environmental factors. Within his model, he cites the parental role, life stressors, child characteristics, and parental stress as the major influences in parenting behaviors. His theory has been empirically supported with particularly strong support for the link between high levels of parental stress and maladaptive parenting behaviors and child maltreatment. However, there is limited research investigating underlying parental characteristics that contribute to parental stress. Most of the previous research on

parental stress is in relationship to child characteristics and environmental stressors. The purpose of the current study is to further explore the role of parental characteristics, in particular cognitions, in levels of parental stress.

Theory of parenting behaviors.

Abidin (1992) proposed that parenting behaviors are influenced by a plethora of environmental, psychological, and developmental factors, such as parental coping skills, parental problem-solving skills, parental styles, attachment levels, unrealistic developmental expectations, unrealistic behavior expectations, parental stress, social support, and income. However, he believed that all of those factors were initially influenced by the personality of parents and the manner in which they perceive their role as parents. For example, do parents believe the parental role to be rewarding? Do parents belief that their parental role affects their autonomy/freedom and has a negative impact on their own life? Or do they belief they will be effective as parents? Their role as parents is shaped by their basic thoughts about themselves, others, and the world around them. If parents have poor self-efficacy or locus of control, there are probably not going to be confident in their parental role.

He describes the parental role variable as each parent's internal working model or beliefs about being a parent and each parent's assessment of the costs/harm and benefits associated with being a parent (Abidin, 1992). The results of those assessments influence levels of parental stress. Parental stress is then seen as a motivational variable that encourages them or forces them to tap into their resources that support them as a parent. If the resources are limited or maladaptive, this could lead to negative parenting behaviors. His theory of parental stress draws parallels to Lazarus and Folkman's (1984)

cognitive theory of the general stress reaction. The events or situations themselves do not directly lead to how a parent responds to a stressful event, but rather their interpretation and understanding of the event affects their response.

Theory of parental stress.

Within Abidin's theory of parenting behaviors, the construct of parental stress and specific sources that are believed to contribute to parental stress are examined. Abidin (1992) proposed three major domains of parental stress: parent characteristics, child characteristics, and situational/life demographics. These domains are reflected in Abidin's Parenting Stress Index (PSI), which is designed to measure the various sources and aspects of parental stress (1995).

The first domain, *parent characteristics*, refers to sources of stress and problems that may interfere with the parent-child relationship and that are related to the functioning of the parent. Parental characteristics are factors unique to the parent, but also have a significant impact on the child-parent relationship. Abidin (1995) further divided the parent domain into seven specific constructs related to parent functioning that could lead to stress: sense of competence (confidence in their abilities to control their children's behaviors and knowledge of practical child development), isolation (level of social support and connectedness with outside world), attachment (sense of emotional closeness), health (stress related to the health of the parent), role restriction (the level at which the parental role is restricting their freedom and their ability to maintain their own identity), depression (presence of clinically significant depressive symptoms), and spouse (level of emotional and active support from co-parent). Each of these seven factors has

been identified as a risk factor related to dysfunctional parenting behaviors and child maltreatment.

In attempts to empirically validate Abidin's first premise of the source of parental stress, parental characteristics, researchers have investigated the relationship between parental variables identified by Abidin, such as depression, levels of perceived attachment, competence in parenting skills, locus of control, and knowledge of developmental expectation, and their impact on overall levels of parental stress. A study conducted by Kucuker (2006) assessed parental outcomes (parental stress, depression, competence) in an early intervention program designed to teach parenting skills for parents of children with disabilities. The sample consisted of 29 mothers and fathers of children aged six months to 4 years with various developmental disabilities. Initial analysis of parental outcome measures indicated that there was a significant positive relationship between parental depressive symptoms and overall levels of parental stress. After completion of the early intervention, both mother and fathers exhibited decreases in depressive symptoms, but only fathers exhibited significant decreases in parental stress. Furthermore, results also indicated that the intervention increased parents' competence in their parenting abilities that, in turn, decreased parental stress and depressive symptoms. The study provides empirical support for Abidin's theory of parental stress by demonstrating that depressive symptoms and low perceived competence are related to high levels of parental stress. Abidin stated that low perception of competence and depressive symptoms constitute two of the pathways to high level of stress, and the study by Kucuker (2006) indicates that when a parent's competence in their parenting abilities increases, their parental stress decreases.

In a study conducted by Perren et al. (2005), the relationship between parental stress and depressive symptoms in a nonclinical sample of parents with children aged 6 months to 2 years without any disabilities was investigated. The investigators were primarily interested in levels of postpartum depression in mothers, but the fathers were also assessed for levels of depression. Results indicated that depression heightened 12 months postpartum, but across all intervals, levels of parental stress were positively associated with depressive symptoms in both mothers and fathers. Results also support the hypothesis that parental depression is a factor in the development of high levels of parental stress.

Jung (1999) also investigated the relationship between parent stress and depressive symptoms, but Jung (1999) utilized a nonclinical minority sample of parents. The sample consisted of 150 Korean women who were mothers of children aged 3-18 without any reported disabilities or behavioral problems. Results indicated a significant positive relationship between parental stress and depressive symptoms. The higher the parental stress reported by the parents, the greater the levels of depressive symptoms that they reported. Results also indicated that low levels of parental competence were significantly correlated with parental depressive symptoms. The study suggests that both parental stress and level of competence are important factors in the development of depression in minority parents.

Silver et al. (2006) investigated the relationship between two parental characteristics, levels of perceived competence, and depressive symptoms and levels of parental stress in a larger sample of mothers (N = 279) with children aged 6 months to 3 years. Results indicated a negative significant relationship between levels of competence

and levels of parental stress. The lower the parents' competence in their parenting abilities, the higher the parental stress they experienced. Furthermore, the results indicated a negative relationship between competency and depressive symptoms. The lower the perceived competence by the parents, the more depressive symptoms they have experienced. The results suggest that the way parents perceive themselves and their parenting abilities affect their levels of stress in the parental role. The findings of the study are also consistent with cognitive theory of depression (Beck, 1979), which states that low levels of competency and self-efficacy play an important role in the development of depression.

Eanes & Fletcher (2006) conducted a study similar to Silver's (2006), but they investigated the relationship between parental stress, competency levels and their perception of their children's behaviors. The sample consisted of 76 adoptive mothers with special needs children aged 3 to 9. Results indicated that there was a significant negative relationship between levels of perceived competency and children's internalizing behaviors in the group of parents with high levels of parental stress. There, however, was not a significant relationship between levels of perceived competency and children's internalizing behaviors in the group of parents with low levels of parent stress. The results suggest that high levels of stress are more affected by the parent's competence in parenting abilities then the actual levels of their children's maladaptive behaviors.

In regard to the relationship between self-efficacy of parents and levels of parental stress, Raikes and Thompson (2005) conducted a study investigating the

relationship between parental self-efficacy, social supports, and parental stress in a sample of low-income mothers enrolled in an Early Head Start program. Results indicated a negative correlation between measures of parental self-efficacy and measures of parental stress. Mothers higher in self-efficacy and who had more perceived social support reported lower levels of parental stress. Results also indicated that level of income was less associated with parental stress levels for mothers who scored high on self-efficacy and social support scales. The results provide support for the important role that cognitive factors play in parental stress; the cognitive factor self-efficacy played a more significant role in the presence of parental stress than income. Theoretically, self-efficacy of the parent and levels of social support drive levels of parental stress and there is no direct relationship between income and parental stress.

Coleman and Karrarker (2000) also conducted a study investigating the relationship between self-efficacy and parental stress and parenting behaviors among a sample of 145 mothers of school-age children. Coleman and Karrarker (2000) utilized general self-efficacy scales compared domain specific measures of parenting efficacy, and results indicated a strong negative relationship between general self-efficacy and levels of parental stress. The greater the parents' beliefs and thoughts about their capabilities to exercise influence over events that affect their lives, the lower the levels of parental stress they experienced. Results provided further support for the link between parental self-efficacy and parental

outcomes, but also provided support for the influence general self-efficacy has on parental stress and parenting behaviors.

The second domain of parental stress outlined by Abidin (1995), *child characteristics,* is the source of parental stress associated with unique qualities of the child that may make parenting more difficult. Abidin (1995) categorized the child domain into seven specific constructs unique to the makeup of the child that could lead to parental stress; distractibility/hyperactivity (behaviors associated with ADHD), adaptability (child's ability to adjust to changes in his or her environment), parent reinforcement (the level at which the parent receives positive reinforcement from the child), demandingness (the level that parent feels that the child places demands on them), mood (level of disturbances of mood in the child), and acceptability (the level at which the parent feels that the child's emotional characteristics meet their own expectations).

There is a plethora of studies that empirically validate the role characteristics unique to the child play in the development of parental stress. Characteristics of the child include intellectual disabilities, developmental disabilities, medical illness, and behavioral health problems. Uzark and Jones (2003) investigated the presence of parental stress in a sample of mothers with children aged 2 to 12 with a chronic health condition that required ongoing medical treatment (heart disease). The investigators administered the PSI to both a sample of parents with children with heart disease and a normative sample of parents with children without any chronic medical conditions. The sample of

parents of children with heart disease scored significantly higher on overall levels of parent stress and subscales within the PSI that measure levels of demandingness and adaptability then to the normative parent sample. Results suggest that the health characteristics of the child have an impact on parental stress.

Vermaes et al. (2008) also conducted a study investigating the relationship between parental stress and chronic medical conditions of children, but Vermaes et al. (2008) utilized a sample of 37 parents of children with spina bifida aged 6- to 12. The investigators compared levels of parental stress and levels of physical and intellectual impairment due to spina bifida. Results indicated significant positive relationships between levels of parental stress and levels of impairment in the children with spina bifida. The greater extent to which the parents perceived their child's functioning to be impaired by spina bifida, the greater the levels of parental stress they experienced. The results are also consistent with previous research on chronic medical conditions and parental stress.

Davis and Carter (2008) investigated levels of parental stress in parents of children with a pervasive developmental disorder. The sample consisted of 54 parents with children aged 2 to 4 with an autism spectrum disorder. Specifically, the investigators were interested in exploring the relationship between externalizing behaviors and regulatory problems of children with autism and levels of parental stress. They indicated a positive significant relationship between the children's externalizing behaviors and levels of parental stress. The more externalizing behavior the child exhibited, the greater the level of parental stress

reported. The results suggest that behavioral issues associated with certain developmental issues have a negative impact on levels of parental stress.

In regard to behavioral and mental health disorders and their impact on parental stress, Anastopoulos et al. (1992) conducted a study investigating levels of parental stress in parents with children with attention deficit hyperactivity disorder (ADHD). The investigators utilized a clinical sample of 104 parents of children aged 6 to 12 with ADHD. In order to investigate the relationship between the children's ADHD symptoms and levels of parental stress, the investigators used the Parental Stress Index and Conner's ADHD scale which is intended to measure both ADHD symptoms and symptoms of oppositional defiant disorder. The results indicated that both child pathology and parent pathology accounted for a significant portion of the variance in overall parenting stress. The child's oppositional-defiant behavior and maternal psychopathology were especially strong predictors of parental stress.

Baker and McCal (1995) conducted a study similar to Anastopoulos's (1992) by investigating levels of parental stress in parents of children with ADHD. In addition, Baker and McCal (1995) compared levels of parental stress in a sample of parents of children with learning disabilities and those without them. The investigators measured level of stress using the Parental Stress Index and the child's externalizing and internalizing behaviors using the Child Behavior Checklist (CBCL). There were significant positive correlations between levels of parental stress and both externalizing and internalizing behaviors, as measured by the CBCL. The ADHD group displayed higher levels of overall parental stress when compared with both the learning disabled group and the control group. Results suggest that the greater the pathology a child

displays, the greater the parental stress is experienced by the parent. Results also provided support for the role behavioral health issue in the development of parental stress.

The final domain, *life stress*, relates to stress experienced outside of the child-parent relationship. Typically, this stress is related to circumstances outside the immediate control of the parent, such as poverty, loss of a job, socioeconomic status, discrimination, and social support. Previous research has indicated that such factors as poverty, financial difficulties, and lack of social support are highly correlated with overall parental stress (Abidin, 1990a).

Ostberg and Hagekull (2000) conducted a large study investigating the relationship between life stress factors such as social support, socioeconomic stress, and high workload and overall levels of parental stress using a sample of 1,081 mothers residing in Sweden. Results indicated that all three variables were significantly correlated with parental stress. Social support was the variable most strongly correlated with parental stress. The more social support parents had, the less parental stress they reported. Results suggest that all three variables play an important role in the development of parental stress, but are not causal.

Cognitive e theoryof tress.

Lazarus and Folkman (1984) developed a model of stress and coping that can serve as a conceptual foundation for understanding the role of cognitions and appraisals play in parental stress. The foundation of Lazarus's model of stress is based on Beck's (1976) cognitive theory of psychopathology, which states that distorted thinking plays a significant role in the etiology of different mental health disorders (depression, anxiety,

etc.). Beck and Ellis (1979) proposed that the way we think about situations affects how we respond to situations. An event cannot cause someone to feel or behave in a certain way, but rather, how we think affects how we feel or react to a particular situation. Lazarus adapted this premise to explain stress reactions. He stated, "stress resides neither in the situation nor in the person, it depends on a transaction between the two" (Lazarus, 1984 pg. 21).

Lazarus and Folkman's model (1984) maintains that there are two types of cognitive appraisals that are especially important in mediating reactions to stress. The first, primary appraisal, refers to the way in which one evaluates the significance or meaning of a given event. Initial evaluation can be divided into three categories: irrelevant, benign-positive stressful. Within the stressful appraisal are the degree of harm/loss, the degree of threat and the challenge of the perceived stressor. These appraisals are influenced by factors unique to the situation, and factors unique to the person. Lazarus (1984) believed that the most important person factors are commitments and beliefs.

He defined commitments as expressions of what is important to the person, and beliefs are thoughts associated with how a person evaluates what is going to happen (Lazarus, 1984). More specifically, beliefs in relationship to stress are centered on control and competence in handling certain stressful situations. Lazarus's definition of beliefs draws some parallels to the concept of cognitive schemas. Cognitive schemas are defined as general knowledge about situations and events that guide our recognition and understanding of new information and new situations (Young, 1990). Those internal working models in turn, affect our automatic thoughts about the stressful situation and

affect our emotional or coping response. Maladaptive internal working models and schemas may lead to an initial increased stress reaction, but the individual may not be aware of such schemas.

The second type of cognitive appraisal, secondary appraisal, refers to the process of evaluating what can be done about the stressful event (Lazarus, 1984). The person analyzes various options or coping skills that can be utilized to deal with the stressful situation and they assess the effectiveness of each coping or problem- solving strategy. Several factors can influence such secondary appraisals, including the individual's preexisting cognitive and behavioral coping resources, problem-solving abilities, and expectations that his or her skills will be effective in dealing with the situation. Both primary and secondary appraisals ultimately affect how the individual is going to interpret and react to a given stressful situation.

Distorted hinking and stress.

There is strong empirical support for the cognitive theory of stress, as outlined by Lazarus and Folkman (1984), and cognitive theory of emotional disorders as outlined by Beck (1976). A multitude of studies established a clear and strong relationship between distorted thinking and stress and emotional problems. Schachter and Singer have studied the link between cognition, stress, and emotional states as early as 1962. Early on, Schachter and Singer (1962) were able to show that the manner in which someone appraises or thinks about a given situation can have a drastic impact on his or her emotional state. Studies have been conducted on various samples including both medical/psychiatric populations and nonclinical populations and have utilized various measures of cognitive distortions.

Farrell et al. (2004) conducted a study investigating the relationship between cognitive distortions and general stress in a sample of individuals with type 1 diabetes. Results of the study indicated that there were significant positive correlations between both general stress and stress specifically related to diabetes and cognitive distortions as measured by the Dysfunctional Attitudes Scale (DAS). The findings indicate that the more distorted thinking that is present, the greater the level of stress individuals with diabetes experience. The findings are consistent with basic cognitive models of stress and emotional disorders.

Dileranzo (2007) further investigated the relationship between irrational thinking and levels of stress, but utilized a sample of college students that were about to undergo final examination and midterm. There were positive correlations between irrational thinking and overall stress levels prior to both midterm and final examination. Further statistical analysis also indicated that specific distortions such as awfulizing/catastrophizing, black and white thinking, and global evaluation/self-downing were significantly correlated with levels of stress. Results suggest that they he level of the presence of distorted thinking when faced with stressful situations, the greater level of overall distress experienced. The results are also consistent with basic cognitive theory of emotional disorders (Beck, 1976).

Chang (1997) conducted a study similar to Dileranzo's (2007) by investigating the relationship between irrational thinking and cognitive distortions in a sample of college students. Results were congruent with Dileranzo (2007), indicating a significant relationship between irrational thinking and overall levels of life stress. The more the distorted thinking the students experienced, the greater the life stress they reported.

Results also indicated that there was a significant relationship between distorted thinking and depressive symptoms.

Cognitive behavioral theory of parenting behaviors and child maltreatment.

The general premise of cognitive-behavioral models of maladaptive parenting behaviors and child maltreatment is that parental cognitions mediate parent emotions and parenting behaviors. The cognitive behavioral model in many ways is similar to Abidin's (1992) theory of parenting behaviors. Milner's cognitive behavioral model (2003) proposed three major constructs that play a significant role in child maltreatment; (a) parental cognitive factors such as maladaptive cognitive schemas and cognitions relating to and influencing parenting behaviors, (b) Deficits in executive functioning of the parent, and (c) contextual factors such as stress, child characteristics, and other environmental factors such as poverty.

In regard to the first premise of cognitive behavioral models of child maltreatment, i.e., parental cognitive factors, Milner (2003) proposed four major preexisting cognitive schemas: external locus of control, poor understanding of developmentally appropriate norms, low empathic perspective taking, and low perceived attachment, all of which increase the risk for child maltreatment. A parent with a poor locus of control schema may believe that the child has control over child-parent situations and that they have no control over their child. The external locus of control can contribute to increased anger and frustration, which increases the risk for child maltreatment. Parents with unrealistic developmental expectations about their child's behaviors and abilities can have inappropriate parenting responses. Empathic perspective taking relates to a parent's ability to take the child's perspective and empathize with

them. Abusive parents have difficulties putting themselves in the child's position and having the ability to take a child's perspective can reduce misinterpretations of the child's behaviors. In turn, those preexisting cognitive schemas relating to constructs such as locus of control and level of attachment are activated every time the parent is faced with a new discipline situation.

Finally, because attachment relates to how parents view their children and their relationship with their children, schemas relating to attachment have an impact on increased risk for maladaptive parenting behaviors or child maltreatment. Parents may hold negative cognitions in regard to their own parents who may have been abusive or neglectful, which could impact the attachment process. Parents may also hold negative beliefs about the nature of the child-parent relationship and interpersonal relationships in general.

Previous research has supported the first premise of cognitive-behavioral theory of child maltreatment by demonstrating that cognitive variables account for a significant portion of the variance on scales of child abuse risk. Rodriquez and Richardson (2007) examined the relationship between cognitive components as outlined by Milner (2003) and parental risk for child maltreatment in a sample of non abusive parents. Results of a hierarchal regression indicated that external locus of control, poor perceived attachment, and low empathic perspective taking accounted for a significant portion of the variance in an inventory designed to measure child abuse potential. All three factors were significant predictors of child abuse potential along with contextual factors like parental stress. These findings provide support for Milner's cognitive model of child maltreatment.

Caselles and Milner (2000) also investigated the relationship between cognitive factors such as locus of control and appraisals of their role as a parent, but they utilized a clinical sample of parents with a history of child maltreatment. Results indicated that external locus of control (low perception of control as a parent) and unrealistic expectations of the child's behaviors accounted for a significant portion of the variance in an inventory designed to measure risk for future child maltreatment. The findings are also consistent with cognitive behavioral theories of child maltreatment and the component of the theory that states that cognitions relating to locus of control can be activated in any situation relating to child behaviors. The parents' perception that they do not have control over the child's behavior can lead to maladaptive parenting behaviors through both disengagement and overly harsh reactions.

The second major premise of cognitive behavioral models of child maltreatment is the role executive functioning plays in parenting behaviors. Milner (2003) specifically outlined the role of executive functioning in child rearing and parenting behaviors. Executive functioning of parents includes problem solving, emotional regulation, impulse control, cognitive flexibility, decision making skills, and perspective taking, and even though they are independent of the child-parent relationship they also influence parenting behavior. Parents are required to identify and anticipate risks before they occur, generate alternative solutions to problems that are in the best interest of the child, regulate their own emotions in relationship to negative child behaviors, and respond to those problems. Impairments in any of these areas of executive functioning are risk factors for child abuse and neglect and are well documented in previous child maltreatment literature. Overall, physically abusive and neglectful parents display poor problem-solving abilities in both

child rearing and non-child rearing situations compared to nonabusing parents (Hanson & Conaway, 1989).

There are a variety studies investigating problem-solving abilities in parents with a history of child maltreatment and maladaptive parenting behaviors. Azar (1999) investigated problem-solving abilities in a sample of mothers with a history of physical abuse and neglect. Results indicated that those with a history of child maltreatment had fewer problem-solving and coping abilities than mothers without a history of child maltreatment. In this study, problem solving was defined and measured as the parent's ability to deal with a variety of situations involving risk and potential risk in regard to the safety of the child and weighing both the long-term and short-term consequences of the potential solutions. The authors also hypothesized that deficits in problem solving are global and that the deficits have an adverse effect on other domains of the parent's life. They proposed that the global deficits could be related to other cognitive factors, such as cognitive distortions, and should be further explored.

Hanson and Conway (1989) conducted a study similar to Azar's (1999) investigating the relationship between problem solving and child maltreatment. The authors compared global problem-solving abilities in parents with and without a history of child maltreatment. Results indicated that parents with a history of child maltreatment displayed lower scores on the problem-solving measures then parents without a history of child maltreatment. This study is also consistent with one of the main premises of cognitive behavioral theory of child maltreatment, which is the important role executive functioning has in parenting behaviors.

The third and final premise within the cognitive behavioral framework is *contextual factors*, factors independent of the parent-child relationship that also have a significant impact on parenting behavior (Milner, 2003). Contextual factors are typically described as personal characteristics of the parents, the child, and the environment. Some examples of these factors are parental stress, low social support, history of mental illness/substance abuse, and characteristics of the child, including cognitive functioning, mental health issues, and medical needs. The contextual factors in turn influence pre-existing schemas and information processing. Parental factors like history of abuse and neglect and mental illness may contribute to maladaptive schema development. Also, factors like stress may effect information processing in the sense that cognitive resources are being overwhelmed. Limited or impaired cognitive resources may lead to lapses in judgment and inappropriate parenting behaviors.

Of all the above-mentioned contextual variables, parental stress appears to be the single most influential contextual factor leading to child maltreatment (Abidin, 1992; Chan, 1994). There are two ways researchers have attempted to empirically validate the link between parental stress and child maltreatment. Researchers utilize regression analysis to investigate the ability of parental stress to predict child maltreatment risk in both clinical and nonclinical populations. To measure child abuse, risk researchers typically utilize the Child Abuse Potential Inventory (CAPI), due to its strong psychometric properties. Researchers also compare outcomes on measures of parental stress in groups of parents with and without a history of child maltreatment.

Rodriquez and Richardson (2007) conducted a study investigating the relationship between parental stress and abuse potential. To test their hypothesis that parental stress

was a significant predictor of child abuse potential, the investigators, utilized a regression analysis. Both the Child Abuse Potential Inventory (CAPI) and the PSI were administered to a sample of low-income African American mothers without a history of abuse and neglect. Results indicated that parental stress was a significant predictor of child abuse potential. The higher the level of parental stress, the more at risk the parent was of engaging in child abuse and neglect.

Crouch (2001) conducted a study similar to Rodriquez and Richardson's (2007), but the investigator also explored the role that parental beliefs about corporal punishment play in the development of parental stress and risk for child abuse. The investigators hypothesized that parental stress would only be positively correlated with child abuse potential among parents who had strong beliefs in corporal punishment. Results supported the investigator's hypothesis, and there was only a significant positive relationship between parental stress and child abuse risk in the group of parents with strong beliefs about corporal punishment. The results support not only the idea that parental stress is an important factor in child abuse potential, but that parental cognitions about parenting play an underlying role in the development of parental stress. Parents who hold strong beliefs about corporal punishment may not have confidence in their ability to utilize other parenting methods to control their children's behaviors, and this may contribute to increased stress about being a parent.

Chan (1994) conducted a study investigating the relationship between parental stress and child abuse and neglect by comparing levels of parental stress in samples of parents with and without a history of abuse and neglect. To assess parental stress, the investigator utilized the PSI. *T*-test analysis indicated significant differences in scores on

the PSI between the sample of nonabusive, and abusive parents. The scores on the PSI were significantly higher within the abusive parent sample, and the results supported the hypothesis that parental stress is a significant factor in the development of child abuse/neglect.

Psychological sequelae associated with maladaptive parenting behaviors.

Previous research has indicated that physical abuse has been linked to increased externalizing psychopathology (e.g., aggression, oppositional and defiant behavior, suicidal behaviors, and delinquency), and sexual abuse is linked to increased internalizing psychopathology (e.g., suicidal ideations, depression, anxiety, and predispositions to high risk behaviors) (Walrath et al., 2006). Studies also have cited the increase in substance abuse in adolescents with a history of child maltreatment compared to adolescents without a history of child maltreatment. Previous outcomes studies in relationship to childhood victims of abuse and neglect have also indicated that the population displays higher rates of pathology consistent with various clinical disorders (e.g., depressive disorders, anxiety disorders such as posttraumatic stress disorder, and childhood behavioral disorders) compared to any other clinical populations (Linning & Kearney, 2004).

Toth, Cicchetti,and Jungmeen (2002) examined the relationship between both externalizing and internalizing psychopathology in a small sample of children aged 8 to14 with and without a history of child maltreatment. Investigators compared scores of both groups on child outcome measures intended to assess a wide range of pathology and behavioral problems. As predicted the child maltreatment group scored significantly

higher on outcome measures of both externalizing and internalizing behaviors compared to the non-child maltreatment group.

Garnefski and Diekstra (1995) conducted a similar study, but they utilized a larger sample of adolescents with a history of sexual abuse only. The investigators also compared the group to a control group with no history of child maltreatment. The group of sexual abuse victims reported considerably more emotional and behavioral problems than the control group. Results also indicated that males with a history of sexual abuse had more emotional and behavioral problems than their female counterparts. This study suggests that children with a history of sexual abuse are at greater risk to develop emotional and behavioral problems than children without a history of sexual abuse.

Due to the severity of the psychological sequelae associated with childhood abuse and neglect and the prevalence of abuse, there is an increasingly great need for better treatment approaches for both the victims and the perpetrators. There are empirically validated cognitive behavioral treatment programs for trauma victims, but there are minimal empirically validated treatments for perpetrators of child maltreatment (Cohen, 2006). Putting increased focus on treating the perpetrator should decrease the risk that the individual will offend again in the future.

Previous studies utilizing the inventory of cognitive distortions (ICD).

Rosenfield (2002) conducted a study investigating the relationship between distorted thinking as measured by the Inventory of Cognitive Distortions, and both Axis I and II pathology in an outpatient mental health clinic. Results of the study indicated strong positive correlations between the severity of both Axis I and Axis II pathology as

measured by the Millon Clinical Multiaxial Inventory-III, and distorted thinking as measured by the ICD. Results also indicated that patients with carried both an Axis I and Axis II disorders had significantly higher ICD scores compared to patients with only Axis I pathology. Overall, the more distorted thinking a person experiences, the more pathology they experience.

Yurica and DiTomasso (2001) conducted a study similar to Rosenfield's (2002) by investigating the relationship between cognitive distortions as measured by the ICD, and various types of psychopathology. The study focused more on Axis I pathology, such as depression and anxiety. Results indicated a strong positive relationship between cognitive distortions as measured by the ICD, and anxiety, and depressive symptoms as measured by the BDI and BAI. Results suggest that cognitive distortions are strongly related to both depressive and anxious symptoms and that the ICD is a valid measure of cognitive distortions. Additionally, a factor analysis was conducted, and 11 factors were extracted, accounting for 66.6 % of the variance in ICD scores. The 11 factors are consistent with previous categorizations of common cognitive distortions in the cognitive therapy literature.

Goins (2008) conducted an archival study investigating the relationship between cognitive distortions as measured by the ICD and psychological and behavioral health risk factors in a family medicine outpatient clinic ($N = 150$). Results of the study revealed positive correlations between cognitive distortions, as measured by the ICD and behavioral health and psychological risk factors, such as stress, and a negative relationship correlation between perceived levels of social support and distorted thinking. The results are consistent with a similar study conducted by Uhl (2007) that suggested

that distorted thinking is related to behavioral health risk factors in a medical sample. The results also support the validity of using the ICD to better understand the relationship between distorted thinking and behavioral health risk factors.

Chiumento (2008) conducted a study investigating the relationship between lifestyle habits, social support, and psychological risk factors associated with hypertension in a sample of adults with hypertension. Results indicated a negative relationship between distorted thinking and perceived levels of support and a positive relationship between poor lifestyle habits and cognitive distortions, as measured by the ICD. Results suggest that perceived levels of social support and poor lifestyle habits are related to distorted thinking.

Ferguson (2006) conducted a study investigating the relationship between distorted thinking, depression, and quality of life in both clinical and nonclinical geriatric populations. Results of the study indicated that older adults with depression exhibited more distorted thinking and reported less quality of life compared to non-depressed older adults. Scores on the ICD were also positively correlated with scores on the Geriatric Depression scale. The greater the presence of distorted thinking, the more depressive symptoms that individual experienced. The findings are consistent with previous studies investigating the relationship between distorted thinking and depressive symptoms.

In conclusion, previous research has indicated that there is strong link between the following variables: cognitive distortions and general stress, parental stress and child psychopathology, and parental stress and child maltreatment, but few studies have investigated how all of these variables are interrelated. Theoretically, without the initial pathway of distorted thinking by parents, the risk for parental stress would be reduced

and subsequently, child psychopathology would decrease. The current study attempted to provide empirical support for this theory by showing that parental stress indeed mediates the relationship between distorted thinking and child psychopathology. The relationship between distorted thinking and child psychopathology is not absolute, and when parental stress is removed, the relationship between distorted thinking and child psychopathology is no longer significant.

Chapter 3

Hypotheses

Research question.

What is the relationship between cognitive distortions, perceived child psychopathology and parental stress among parents with children aged 6 to 18?

Hypothesis 1.

Ho: Parental stress does not mediate the relationship between cognitive distortions and perceived levels of child psychopathology.

H_1: Parental stress will mediate the relationship between cognitive distortions and perceived levels of child psychopathology.

The criteria for demonstrating the mediating effect of parental stress are:

1 Cognitive distortions will be a significant predictor of perceived levels of child psychopathology.

2 Cognitive distortions will be a significant predictor of parental stress.

3 Parental stress will be a significant predictor of perceived levels of child psychopathology.

4 When the relationship between parental stress and perceived levels of child psychopathology is controlled for, a previously significant relationship between cognitive distortions and perceived levels of child psychopathology will be significantly reduced or eliminated.

Based on previous theories of maladaptive parenting behaviors, cognitive factors are not believed to have a direct impact on parenting behaviors and perceived level of child psychopathology, but rather parental cognitive factors such as cognitive distortions play a significant role in the development of parental stress, which in turn increases the likelihood of maladaptive parenting behaviors (Abidin, 1992). Maladaptive parenting behaviors than are associated with increases in maladaptive externalizing and internalizing behaviors in children. Cognitive factors are believed to be the initial pathway of negative parenting behaviors, which negatively affect child psychopathology. Previous empirical studies have not tested parental stress as a mediator between cognitive distortions and perceived levels of child psychopathology, but previous research has shown that the three variables are strongly related. Specifically, previous studies have validated that there is a strong correlation between parental stress and child psychopathology and behavioral problems and parental cognitive factors and parental stress (Baker and McCal, 1995; Silver, Heneghan, aurman, and Ruth, 2006).

Hypothesis 2.

H_0: There is not a relationship between distorted thinking and parental depressive symptoms among parents with children ages 6-18.

H_1: There is a significant positive relationship between distorted thinking and depressive symptoms among parents with children aged 6 to18.

There is extensive research citing the major role distorted thinking plays in the development of both Axis I and Axis II pathology, in particular depressive disorders. The research has been conducted on both parent and nonparent populations, and the results

have been consistent. Furthermore, research has cited specific cognitive distortions themed around helplessness, incompetence, and defectiveness that are highly predictive of depressive symptoms in various clinical populations (Silver, 2006; Beck, 1979).

Hypothesis 3.

H_0: There is not a significant relationship between distorted thinking and perceived levels of parental competency.

H_1: There is a significant positive relationship between distorted thinking and perceived levels of parental competency (higher score on the competence subscale indicated greater stress levels related to competency). The greater the presence of distorted thinking, the more stress the parents have related to low competence to control their children's behaviors.

Cognitive theory and research has indicated that distorted thinking and specifically cognitive distortions play a role in an individual's self-efficacy and locus of control (Beck, 1979). Research in the area of parental stress and child maltreatment has also suggested that parents with high levels of distorted thinking lack confidence in their abilities to control their children's behaviors effectively. This lack of competency, and poor locus of control has been linked to increased risk for child abuse/neglect.

Chapter 4

Methods

Design/Design justification.

The design of the study was quantitative. A quantitative design was utilized to quantify the relationship between multiple variables (parental stress, cognitive distortions, and child outcomes) within a parent sample.

Inclusion Criteria.

There were five basic inclusion criteria. First, participants must have been a parent or primary caregiver of a child aged 6 to18. The age range of 6 to18 was selected due to the Child Behavior Checklist being normed for children ages 6 to18. Second, parents must have been over the age of 18 at the time of their participation. Children rated by the parent or caregivers were also required to live in the home of the parent or caregiver in order to maintain the reliability and validity of the assessment measures. Fourth, children rated by the parent or caregiver must have resided in their care for at leas 2 years. Finally, the parent or caregiver must have been the mother of the child or the female caregiver. Fathers were excluded because based on research, mothers spend more time with their children and hence would be able to more reliably complete the assessments.

Exclusion Criteria.

Male caregivers or fathers were excluded from the study. Furthermore, children who had been in the care of the parent or caregiver for less than 2 years were also excluded from the study. Women who had difficulty understanding what they read were

excluded from the study. This was assessed by whether or not the participant could read and comprehend the participation letter. Additionally, women with a history of brain injury due to conditions such as a car accident, tumor, or stroke were excluded from the study because they may not been able to accurately or reliably complete the assessments. Women who met the inclusion criteria, but didn't complete the assessments in their entirety were also excluded from the study. There were no other exclusion criteria for the study, and the study attempted to include individuals from various cultural and ethnic backgrounds.

Participants.

Participants were 70 biological mothers or female primary caregivers of children aged 6 to18 who resided in New Jersey and Pennsylvania. Ninety mothers or female caregivers agreed to participate in the study, but 20 did not return the assessment packets. The mean age of the omen was 39.7 (range, 21 to 57), and the mean age of children rated by the women was 10.96 (range, 6 to17). The average number of children residing with the women was 1.93 (range, 1 to 4). Ethnicity of the parents was 78.6% Caucasian, 10.0 % African American, 8.6% Hispanic, and 1.4% Asian. Ninety-eight percent of the women were the biological mother of the child and 1.4 percent was a friend of the child's biological family. As for marital status, 70% were married, 17% were single, and 10% were divorced. In regards to education level of the parents within the sample, the distribution was relatively even, with the exception of less then high school and General Education Degree (GED) (7% less than high school, 8% GED, 21% high school graduate, 17% some college, 21% 4-year college degree, and 24% four years of college and beyond). Household income was not evenly distributed with the majority of the sample

falling in the $50,000 to $100,000 range (4% $15,000-25,000, 17% $25, 000 to $35,000, 12% $35, 000 to $45,000, 31%, $50 to $100,000, and 31%, over $100,000. Additionally, participants also reported whether or not the child had a physical disability, a learning disability or a mental health/behavioral problem. Results indicated that 2.9% of children had a physical disability, 12.9% had a learning disability, and 20% had a mental health problem.

Recruitment.

Participants were recruited using a snowball technique. The snowball technique (Heckathorn, 1997) is a means of developing a sample in which existing subjects recruit future subjects from among their acquaintances. The strength of the snowball technique is that it is a cost effective way to gather a sample that is not readily available or easily accessible to the researcher. A limitation of using the snowball technique is the problem of representativeness. The sample may be homogenous, which could affect the generalizability of the results. The investigator initially attempted to recruit participants by seeking out parents of children aged 6 to18 known by investigator in the community. The investigator also trained student assistants to assist with the recruitment of participants, confidentiality, and administration of the packets.

Those participants then were asked if they knew any other parents with children aged 6 to 18 who would be interested in participating in the study. The investigator or research assistant then gave his or her contact information to the participant to give to the potential participant. The potential participant contacted the investigator by phone to discuss arrangements for the study. The participant either completed the study while the

researcher waited or they mailed it back to the researcher in an envelope without a return address.

Plan for informed consent procedures.

No informed consent was required for the study because responses to the assessment questions were anonymous. Attached to each assessment packet was a participant letter outlining the overall purpose of the study, a brief description of the study, brief descriptions of the assessment measures, procedures for maintaining confidentiality, contact information for investigators, and an explanation of potential indirect benefits of participating in the study.

Measures.

Brief demographic questionnaire. The brief demographic questionnaire consisted of 13 questions relating to characteristics of the woman and of the child: current age of parent, number of parents/guardians in the home, number of children residing in the care of the parent and each of their ages, parental level of concern for each child based on a 4 point Likert scale, relationship of participant to child (biological parent, foster parent, adoptive parent, relative), marital status of participant, race of participant and child, whether the child had a physical disability, whether the child had a cognitive disability or a mental/behavioral disorder (e.g., ADHD, depression, and anxiety), current educational level of participant, annual income of parents, and age of children.

Parenting Stress Inventory Third Edition (PSI). The Parenting Stress Inventory (Abidin, 1995) is a 120-item, self-report questionnaire that measures sources of parental stress. Items are rated on a 5 point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree). The PSI consists of a global scale titled Total Stress, and three

domain scales: child characteristics, parent characteristics and life stress. Within the parent characteristic domain there are 7 subscales (sense of competence, isolation, attachment, health, role restriction, depression, and spouse support). The parent domain is intended to measure sources of stress that are related to the parent's functioning. Within the child characteristics domain there are six subscales (hyperactivity, adaptability, reinforces parent, demandingness, mood, and adaptability). The child domain is intended to measure perceived child factors or specific characteristics of the child that have an influence on the parent's stress levels. Additionally, there is a defensive responding scale to measure the degree to which parent may be responding in a defensive manner.

To compute each subscale, all the items that under that particular subscale are summed. Higher scores on a subscale indicate a greater presence of stress related to the specific factor. For example, to compute the child characteristics domain, the scores of each subscale that fall under the child characteristics domain are summed. Higher scores on a scale indicate a greater presence of parental stress related to that domain. To compute the Total Stress Scale, the totals of the child and parental characteristics domains are summed. The higher the Total Stress Scale, score the greater presence of overall parental stress that the parent is experiencing.

The PSI has been shown to be a reliable measure of parental stress. Zakreski (1993) investigated the test-retest reliability of the Total Stress index and the parent and child domains in a sample of mothers visiting an outpatient wellness clinic. The test-retest reliability coefficients for the sample were .77 for the child domain, .69 for the parent domain, and .88 for the total stress index. The results suggest that the total stress

index has moderate test-retest reliability, and the child and parent domains have moderately strong test-retest reliability. Hauenstein (1989) investigated the internal consistency of all of the subscales on the PSI in a nonclinical sample. Alpha coefficients ranged from .70 to .83 for subscales within the parent domain and .70 to .84 for the child domain. The alpha coefficients for the two domains and the total stress scale were .90 to .95. Overall, the results suggest that the PSI has adequate internal consistency.

Scales on the PSI have also have been shown to be a valid measure of paternal stress. There is extensive research on both the predictive and construct validity of the PSI. Haskett (2006) and Either (1993) investigated the construct validity of the instrument in both clinical and nonclinical samples. Results indicated that parent domain subscales were highly correlated with measures of parent psychopathology, such as the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI).

Inventory of Cognitive Distortions (ICD). The Inventory of Cognitive Distortions is a 69-item, self-report questionnaire that measures patterns of distorted thinking (Yurica and DiTomasso, 2001*).* Items are rated on a 5 point Likert scale, ranging from 0 (never think or feel this way) to 4 (always think or feel this way). The ICD consists of one global scale and 11 cognitive distortion subscales (i.e., externalization of blame, fortune telling, magnification, labeling, perfectionism, comparison of others, emotional reasoning, minimization, and mind reading). To compute the global cognitive distortions scale, the scores of all 69 items are summed. The greater the score on the global scale, the greater the presence of distorted thinking in that individual. To compute the cognitive distortions subscales, the scores of the items that fall under that particular subscale are

summed. The higher the score on the ICD, the greater the presence of that particular cognitive distortion exhibited by the individual.

The ICD is still currently in the developmental phase, but the current research on the psychometric properties is promising. There are currently a few studies to date that provide strong support for the reliability of the ICD. Yurica and DiTomasso (2001) investigated the test-retest reliability of the ICD in an outpatient clinical population. Test- retest reliability of the ICD over a 6-week period was extremely high (.99). Whaley (2001) also investigated the test-retest reliability of the ICD in a nonclinical sample. Results indicated reliability coefficients ranging from .96 to .97. Uhl (2007) investigated the internal consistency of items on the ICD utilizing a large sample of adults in a family medicine outpatient clinic. Results (Cronbach's alpha .97) indicated that the ICD is a reliable measure of cognitive distortions and that it has strong internal consistency.

There are also several studies to this date that provide support for the validity of the ICD. Rosenfield (2002) investigated the construct and predictive validity of the ICD in an outpatient clinical population. The global cognitive distortion scale was positively correlated with both Axis I and II pathology as measured by the MCMI-III. Results also indicated that the ICD predicted 50% of the variance in pathology as measured by the MCMI-III. Cognitive distortions are constructs that have shown to be highly correlated with both Axis I and two II pathology. Additionally, Yurica and DiTomasso (2001) conducted a study that provides support for the concurrent validity of the ICD and Ferguson (2006) conducted a study supporting the ICD's predictive validity.

The current study also provides additional support for the predictive validity of the ICD. The global cognitive distortions scale was positively correlated with depressive

symptoms, as measured by the PSI, and overall stress levels as measured by the PSI. Results indicated that the ICD predicated 51% of the variance in depressive symptoms as measured by the PSI, and 37% of the variance of overall stress levels, as measured by the PST. Results of the study indicate strong predicative validity for the ICD.

Child Behavior Checklist for Ages 6-18 (CBCL/6-18). The CBCL/6-18 (Achenbach, 2001) is a self-report measure intended to measure parents' and guardians' perceptions of their children's competencies and behavioral/emotional problems. The CBCL/6-18 consists of 118 items that describe specific behavioral and emotional problems, plus two open-ended items for reporting additional problems. Parents rate their child for how true each item is now or within the past 6 months using the following scale: 0 = not true (as far as you know); 1 = somewhat or sometimes true; 2 = very true or often true.

Based on the 118 items, the following scales are computed: three competence scales (Activities, Social, and School), Total Competence, eight cross-informant syndromes, six *DSM-IV* scales, Internalizing Behaviors, Externalizing Behaviors, and Total Problems. The cross-informant syndromes scored from the CBCL/6-18 are aggressive behavior, anxious/depressed, attention problems, rule-breaking behavior, social problems, somatic complaints, thought problems, and withdrawn/depressed. The six *DSM-IV* scales are: affective problems, anxiety problems, somatic problems, attention deficit/hyperactivity problems, oppositional defiant problems, and conduct problems. Raw scores for each scale are computed by summing all the items under that particular subscale. The higher the sum of the score on the scale, the greater the presence of the child's particular behavior or symptoms.

The CBCL has been shown to be both a reliable and valid measure of child pathology, maladaptive behaviors, and competencies. Ferdinand (2008) conducted a study investigating the construct validity of the CBCL in a sample of 477 children and adolescents in an outpatient counseling setting. Results indicated that the scales measuring both anxiety and depressive symptoms were predictive of *DSM-IV* diagnosis of either a depressive disorder or anxiety disorder. *DSM-IV* diagnoses were based on a standardized structured interview for both depression and anxiety.

Procedures.

First, potential participants were approached by the investigator or research assistant and asked about their interest in participating in a study investigating the relationship between parental stress, their thinking, and the behaviors of their children. If the participants were interested in participating they were handed two pieces of paper. The first was the participation letter. The second form was an inclusion criterion questionnaire, which they completed prior to beginning the study. If they met the inclusion criteria they were given a manila folder that contained the packet of questionnaires and a general instruction page**.**

The participants were asked to read the general instruction page and complete the questionnaires in the following order: PSI, CBCL, ICD, and the brief demographic questionnaire. This order was standardized in an attempt to minimize participant fatigue, as the longest questionnaire was placed near the front of the packet of questionnaires. The women completed the questionnaires based on the child about whom they felt the most concerned. If the participants were equally concerned about more than one child or not concerned about any children, she was instructed to choose the child closest to the

age of 12. The participants completed the questionnaires and placed them back in the manila folder. Some completed the questionnaires and mailed them back or arranged a time for the student investigator or assistant to obtain them.

Once completed and received by the investigator, the forms were then placed and stored in a secure location by the investigator and/or student assistants. Procedures were in place to ensure anonymity of the subjects and are described in more detail below.

Analysis of risk/benefit ratio.

The potential risks associated with the study were minimal because the questionnaires were completed anonymously and the questionnaires had a low potential to cause discomfort. Completing the PSI and CBCL potentially could have triggered some stress reactions in the participants becuase some of the questions focusing on maladaptive behaviors of their child, their own depressive symptoms and their stressful life events. There were no direct potential benefits, but the results of the study may help others in the future.

Procedures for maintaining confidentiality.

Participants' information was collected anonymously, and they were not asked to provide any identifying information (date of birth, date of birth of children, Social Security number or name) when they completed the assessments. The forms were then placed inside a locked file cabinet. When the student assistants collected the forms, they were placed in a secure location until they were given to investigator. Furthermore, when the participants mailed the assessment packets to the investigator they were asked to not include their name or return address on the envelope. The investigator provided them with return labels and postage to increase compliance.

Chapter 5

Results

Correlational analyses between parental stress, distorted thinking, and child psychopathology.

Means and standard deviations for total parental stress, cognitive distortions, and perceived levels of child psychopathology are displayed in Table 1. Initial correlational analyses revealed a strong and significant positive correlation between overall levels of parental stress as measured by the PSI total score, and the ICD (r = .61, p < .000). The more overall stress reported by the parents, the more distorted thinking they experienced. There was also a strong and significant positive relationship between overall levels of parental stress as measured by the PSI total score and the total score on the CBCL (r = .68, p = .000). The more perceived child psychopathology, the greater the overall levels of stress experienced by the parent. Last, there was a significant relationship between parental depressive symptoms as measured by the PSI, and levels of parent perceived competency as measured by the PSI (r = .68). The more incompetent the mother or caregiver felt, the greater the level of depressive symptoms she reported.

Table 1

Means and Standard Deviations for ICD, PSI and CBCL and Intercorrelations Between PSI, ICD, CBCL and Overall Levels of Parental Concern

	ICD	CBCL	PSI Total	PSI Depression	PSI Competency
PSI Total	.61**	.68**		.78	.74**
PSI Depression	.71**	.47**	.78**		.61**

PSI Competency	.48**	.37**	.74**	.61**	
Parent's overall level of concern with identified child	.20*	.61**	.54**	.36**	.36**
Parent's overall level of concern with all their children	.06	.49**	.34**	.07	.22*
ICD Total		.30**	.61	.71**	.48**
Mean	94.7	20.9	224.7	20.6	27.4
Standard Deviation	29.8	13.8	49.8	6.3	7.3

Note. ICD = Inventory of Cognitive Distortions, PSI = Parental Stress Inventory, CBCL = Child Behavioral Checklist

*$p < .05$, **$p < .01$, ***$p < .001$

Mediational model.

To statistically test hypothesis 1, parental stress would mediate the relationship between cognitive distortions and perceived levels of child psychopathology, a series of regression analyses and the Sobel Test were utilized in a fashion similar to Baron and Kenny (1986) and Sobel (1982). First, a forced entry regression analysis was utilized to establish if there was an initial significant relationship between cognitive distortions, as measured by the ICD, and total level of perceived psychopathology as measured by the CBCL. Initial regression analysis revealed that the ICD accounted for 9% of the variance in the CBCL ($R = .302$, $F(1, 68) = 6.85$, $p = .01$). Second, a forced entry regression

analysis was utilized to analyze the ability of the ICD to predict the mediator, overall levels of parental stress, as measured by the PSI. Regression analysis revealed that the ICD accounted for 36% of the variance in the PSI (R= .607, (F(1, 68) = 39.61, p = .000). Third, a forced entry regression analysis was utilized to analyze the ability of the PSI to predict childhood psychopathology (CBCL). Overall levels of parental stress were a significant predictor of childhood psychopathology (CBCL) (R=.678), F(1, 68) = 57.961, P=.000). Finally, when the relationship between parental stress and perceived levels of child psychopathology was controlled for, a previously significant relationship between cognitive distortions and perceived levels of child psychopathology was eliminated. More specifically, when both the PSI (mediator) and ICD were combined to predict perceived levels of overall child psychopathology as measured by the CBCL, regression analysis revealed that the overall regression model was significant (F (2, 67) = 30.8, p = .000). As predicted, the PSI remained a significant predictor of CBCL scores (t =7.059, p=.000); however, the ICD was now no longer a significant predictor of CBCL scores (t=-1.556, p=.124). These results satisfy the informal criteria that mediation is occurring.

Table 2

Summary of Regression models testing for PSI Total Score as a Mediator Between ICD Total Score and CBCL Total

Independent Variable	Dependent Variable	R^2	*F (df)*	*b* (Unstandardized)	*SE*

ICD	CBCL	.09	6.85** (1,68)	-.14	.05
ICD	PSI	.37	39.6.*** (1,68)	1.01	.16
PSI	CBCL	.46	57.9*** (1,68)	.188	.03
ICD and PSI	CBCL	.48	30.8*** (1,68)	.22	.03

Note. ICD = Inventory of Cognitive Distortions, PSI = Parental Stress Inventory, CBCL = Child Behavioral Checklist

*$p < .05$, **$p < .01$, ***$p < .0001$

As a more formal measure of mediation, the Sobel Test was conducted. Once the final two regressions were computed, the raw unstandardized regression coefficient for the association between the independent variable (ICD) and the mediator (PSI) (a = 1.012), the standard error of the unstandardized regression coefficient for the association between the ICD and PSI (sa= .161), the raw unstandardized regression coefficient for the association between the mediator (PSI) and the dependent variable (CBCL) when the independent variable(ICD) is also a predictor of the CBCL (b = .217) and the standard error of the unstandardized regression coefficient for the association between the mediator and the dependent variable when the independent variable is also a predictor of the dependent variable (sb = .031) were utilized to compute the Sobel Test. The Sobel Test is a formal method to test a mediational model and determines if the indirect effect

of the independent variable (ICD) on the dependent variable (CBCL) via the mediator (PSI) is statistically different from zero. Results of the Sobel Test indicated that the indirect effect of the independent variable (ICD) on the dependent variable (CBCL) via the mediator is indeed statistically different then zero (Sobel test statistic = 4.68, p = .000). Therefore, based on the Sobel Test, there is formal evidence that the PSI mediates the relationship between the ICD and the CBCL as shown in See Table 3.

Table 3

Sobel Test utilized to test the PSI as a mediator between the ICD total score and CBCL Total Score

Variable	Input	Sobel Test	Standard Error	*P*
a	1.01	4.68	.05	.0000
b	.22			
sa	.16			
sb	.03			

Note. a= unstandardized regression coefficient for the regression between ICD and PSI, b = unstandardized regression coefficient for the regression between ICD combined with the PSI and the CBCL, Sa = standard error of a, and sb = standard error of b.

Correlation analysis between distorted thinking and depressive symptoms.

To statistically test hypothesis two, there is a significant positive relationship between distorted thinking and depressive symptoms as measured by the PSI among women with children aged 6 to18, a correlational analysis was conducted. Overall scores of the ICD were correlated with scores on the Parental Depression subscale, as measured

by the PSI. The correlational coefficient between the ICD and Depression subscale on the PSI was statistically significant in a positive direction (r = .71, p = .000). Hypothesis two was supported by the results, which indicated the more distorted thinking a women has as measured by the ICD, the more depressive symptoms she experiences as measured by the PSI. See table 1 for all correlation data, means, and standard deviations.

Correlation analysis between distorted thinking and paternal competency.

To statistically test hypothesis 3, that there is a significant positive relationship between distorted thinking and levels of perceived parental competency, as measured by the PSI among women with children aged 6 to 18, overall scores of the ICD were correlated with scores on the Parental Competency subscale, as measured by the PSI. Results of the correlational analysis between the ICD and Competency subscale on the PSI were statistically significant (r =.48, p = .001). Hypothesis 2 was supported by the results, which indicated the more distorted thinking women had, as measured by the ICD, the more stress they experienced related to lack of perceived competency, as measured by the PSI.

Chapter 6

Discussion

The mediational model.

One of the primary goals of the study was to test the hypothesis that overall levels of parental stress mediate the relationship between cognitive distortions and child psychopathology. To accomplish this goal, a series of regression analyses and the Sobel Test were conducted in a fashion similar to Baron and Kenny**,** (1986), and Sobel (1982). First, it was predicted that there would be an initial significant relationship between cognitive distortions and child psychopathology. Second, it was also predicted that there would be a significant relationship between cognitive distortions and parental stress and child psychopathology. Lastly, it was predicted that when the effect of parental stress was removed, the relationship between parental cognitive distortions and child psychopathology would be significantly reduced or no longer significant.

First and most importantly, results of statistical analysis supported the hypothesis that parental stress is a full mediator between cognitive distortions and child psychopathology. All three initial predicted relationships held true: parental cognitive distortions significantly predicted child pathology; cognitive distortions significantly predicted overall levels of parental stress, and overall levels of parental stress significantly predicted child psychopathology. Lastly, when the variance accounted for by parental stress (mediator) was removed or controlled for, the initial relationship between cognitive distortions and child psychopathology was no longer statistically significant.

Consistent with previous theoretical and empirical research, the results of the present study confirm that the relationship between cognitive distortions and child psychopathology is not absolute (Abidin, 1992). Abidin (1992) proposed that parenting behaviors and child pathology are influenced by a plethora of environmental, psychological, and developmental factors, but he believed that all of the factors were initially influenced by the personality of the parent and the manner in which he or she perceives the role as a parent. Theoretically, distorted thinking is related to the development of parental stress, which in turn increases the likelihood that parents or caregivers will engage in maladaptive parenting behaviors. Increased maladaptive parenting behaviors then lead to child psychopathology. In other words, distorted thinking one of the main catalysts of parental stress levels, but stress is what leads to maladaptive parenting behaviors and child psychopathology, not the distorted thinking.

This theoretical framework is consistent with Abidin's theory of parenting behaviors (1992) and cognitive theories of general stress reactions (Lazarus & Folkman, 1984), and the results of this mediational model provide empirical support for those theories. Abidin's model and cognitive behavioral models of parenting behaviors emphasize the initial pathway of negative parenting behaviors, and those initial factors are believed to be most influenced by characteristics unique to the parents, such as their thinking styles. Cognitive models of stress emphasize the fact that the events themselves do not lead to stress reactions, but the individual's interpretation or thoughts associated with the event do. In the case of parental stress, the thoughts and beliefs about themselves, their role as parents', and their child are related to high levels of parental stress.

Furthermore, no studies to date have tested the mediational model in relationship to cognitive distortions, parental stress, and child psychopathology. Previous studies have only investigated certain aspects of the model and provided some limited empirical data that parent appraisals (beliefs about parenting) and cognitive factors (self-efficacy and locus of control) play a role in the development of parental stress and maladaptive parenting behaviors (Caselles & Milner, 2000). There is currently a substantial number of studies that investigated the relationship between parental stress and child pathology, indicating a strong link between parental stress and child characteristics, such as child emotional and behavioral problems (Anastopoulos, 1992; Baker and McCal; Davis and Carter, 2008). Additionally, there are a variety of previous studies that investigated the relationship between cognitive distortions and general stress levels, but not the relationship between parental stress and cognitive distortions (Chang, 1997; Dileranzo, 2007; Farrell et al 2004). The studies are based on cognitive behavioral models of the development of stress highlighting that stress is not a result of events themselves, but rather the individual's interpretation of events and ability to cope with those events (Lazarus and Folkman, 1984).

The current study provides additional empirical support for those two previously established relationships, as evidenced by parental stress being a significant predictor of child psychopathology and cognitive distortions being a significant predictor of parental stress, but the current study also provides further insight into how all of these factors are interrelated. Although the results of this study are promising, more replication studies of the mediational model are needed to further validate and increase the generalizability of the results.

Secondly, the empirical support for the mediational model provides additional support for the importance of better understanding the underlying cognitive factors (cognitive distortions) that contribute to parental stress when treating parents with a history of child maltreatment and maladaptive parenting behaviors. Traditionally, cognitive behavioral interventions for parents with a history of or who are at risk for child maltreatment or dysfunctional parenting behaviors place a significantly greater emphasis on the behavioral component of treatment (modeling, psychoeducation, etc.), and the cognitions of the parents are typically overlooked or not addressed at all (Milner, 2003). Based on the current study and CBT theories a greater emphasis should be placed on identifying distorted thinking related to the parental stress and the parent's core beliefs about themselves and their role as parents.

If clinicians can assist parents in decreasing distorted thinking, it may result in decreases in parental stress and ultimately decreases in the risk of negative parenting behaviors and child psychopathology. Previous research has already identified a strong link between high levels of parental stress and child maltreatment (Chan, 1994; Crouch, 2001; Rodriquez, 2007). Decreases in cognitive distortions should also result in improvements in parental coping and problem-solving skills and specifically coping with children with medical and behavioral health needs (Azar, 1999). It is imperative that clinicians do not treat negative parenting behaviors or child maltreatment in a vacuum, and the current study suggests that understanding the initial pathways of parental stress and maladaptive parenting behaviors is a key variable in treatment success and better treatment outcomes.

Cognitive distortions and depressive symptoms.

The second goal of the study was to test the hypothesis that there is a significant positive relationship between distorted thinking and depressive symptoms. To test the hypothesis, correlational analysis was utilized. Results of the correlational analysis supported the hypothesis and indicated that there is a positive and significant relationship between distorted thinking, as measured by the ICD, and depressive symptoms, as measured by the PSI. The relationship is statistically strong and according to the results, the ICD score accounted for 51% of the variance in PSI Depression score. The more distorted thinking the women had the greater their depressive symptoms.

The results of these studies are consistent with previous research citing the strong association between distorted thinking and Axis I and Axis II psychopathology, in particular depressive disorders (Beck, 1995). The research has been conducted on both parent and nonparent populations and the results have been consistent across studies. The premise that distorted thinking drives depressive pathology is the cornerstone of the cognitive model of depression and cognitive behavioral therapy for depression (Beck, 1979). If clinicians can help patients to initially identify distorted thinking and then help them modify those distortions, they should experience symptom relief. There is an abundance of empirical support for the effectiveness of cognitive therapy when treating depressive symptoms in adults (Barlow, 2007).

The child maltreatment literature indicates that high levels of depressive symptoms in parents are considered a risk factor for child neglect, physical abuse, poor parenting behaviors, and parental substance use/abuse (Milner, 2003). Given that

parental depressive symptoms are risk factors for abuse, it is important for parents with high levels of depressive symptoms to seek and receive effective psychological services. If depressive symptoms can be reduced, overall levels of parent stress should decrease, and the risk for abuse/neglect should also decrease significantly.

Cognitive distortions and parental competency.

The third goal of the study was to test the hypothesis that there is a significant positive relationship between distorted thinking and levels of stress related to levels of perceived parental competency. To test the hypothesis, correlational analysis was utilized. Results of the correlational analysis supported the hypothesis and indicated that there is a positive and significant relationship between distorted thinking, as measured by the ICD, and perceived competency, as measured by the PSI. The relationship was moderately strong and according to the results, the ICD score accounted for 23% of the variance in PSI Competency score. The more distorted thinking the women had, the greater stress they will experience related to low perceived competence in their parenting abilities.

The results of the study are consistent with cognitive theory and previous research indicating that distorted thinking plays an important role in individuals' self-efficacy, competency, and their locus of control (Beck, 1979). Specifically, research in the area of parental stress and child maltreatment has suggested that parents with high levels of distorted thinking lack confidence or competence in their abilities to control their children's behaviors effectively (Coleman & Karraker, 2000; Eanes & Fletcher, 2006; Silver et al. 2006). This lack of competency and poor locus of control has been linked to increased utilization of maladaptive parenting behaviors and increased risk for child

abuse/neglect (Abidin, 1995). Research also suggests that parents not only lack confidence in their own parenting abilities, but confidence in other areas of their life. Low competency then increases the risk for depression, a relationship that has been supported by the current study. There was a clinically significant and positive correlation between depressive symptoms, as measured by the PSI, and levels of competency, as measured by the PSI.

The results of the study and previous research also implies that identifying and targeting distorted thoughts around low self-efficacy are an important part of treatment for parents with high levels of stress, in addition to teaching them positive parenting skills. If parents are first taught positive parenting skills and they do not believe in their ability to effectively implement those strategies, the interventions are less likely to be effective. Consequently, future studies could further explore the relationship between specific cognitive distortions such as black and white thinking, discounting the positive, and emotional reasoning that theoretically affect parental characteristics of parental stress like perceived competency and depressive symptoms, to gain further insight into the nature of their distorted thinking.

Limitations of the study.

There are a few limitations of the study. The first limitation lies within the composition of the current sample due to the use of a snowball technique. The current sample was taken from a nonclinical population, and the makeup of the sample was relatively homogenous. The majority of the participants were well educated and financially secure, Caucasian mothers. Future studies should repeat the current study in a clinical population (history of abuse/neglect by parents), and a more heterogeneous

nonclinical population. Fathers should also be a target population. Repeating the study in different samples will increase the generalizability of the current findings.

The second limitation lies within the method of measuring child psychopathology and child behavioral problems. In order to measure child behavioral problems, the current study used a parent report of perceived levels of child psychopathology (CBCL). One could question the reliability of using a parent report alone because parents could underreport or overreport behaviors for various reasons. Based on previous literature, relying on parent reports of child problem behaviors is a particular concern when the parent is suffering from depressive symptoms. Depression has been shown to negatively skew perceptions of child behaviors and sometimes leads to over reporting. To address this limitation, future researchers could examine the moderating effect parental depression has on the mediation model. Additionally, parents could overreport behavioral problems due to lack of knowledge of age appropriate behaviors, their own distorted views of, and beliefs about their child, and wanting themselves and their children to be viewed in a positive light. To address those concerns, future studies could also incorporate a child self-report measure and a third party (teacher or other caregiver) measure to increase reliability of the information received about behaviors. Future studies could also utilize alternative parent reports of childhood psychopathology such as BASC-2 or Conners CBRS, which have built-in validity scales.

The third limitation lies within the methodology of the study itself. According to Abidin's (1992) theory, maladaptive parenting behaviors have a negative impact on child outcomes. The current study does not incorporate a measure of parenting behaviors, and based on Abidin's theory, parenting behaviors could mediate the relationship between

parental stress and child psychopathology. Future studies should consider incorporating a measure of parenting behaviors and investigate parenting behavior's relationship to parental stress, cognitive distortions, and child psychopathology.

The final limitation relates to the size of the sample. The current study included 70 participants and did not reach its goal to achieve strong statistical power. Based on previous research, lower sample size leads to a greater risk of committing a type II error (false positive). In attempts to control for this, a more conservative *p* value ($p = .01$) was used in the current study. Future studies should focus on achieving a larger sample size perhaps by utilizing a large pediatric clinic, a school or community mental health agency.

Conclusion.

The main purpose of the current study was to examine the relationship between cognitive distortions, parental stress, and child psychopathology. Specifically, the purpose of the study was to test the hypothesis that parental cognitive factors, such as cognitive distortions, are significantly associated with the development of parental stress, which, in turn, increases the likelihood of maladaptive parenting behaviors. Maladaptive parenting behaviors are then related to increases in childhood psychopathology. It was hypothesized that parental stress would be a mediator between parental cognitive distortions and measures of child psychopathology, and the results supported the hypothesis. The results of the study are consistent with Abidin's (1990) theory of parental stress and the initial pathways of stress and maladaptive parenting behaviors.

The current study is one of the few studies that have tested Abidin's (1990) comprehensive theory on the development of parental stress and parenting behaviors, and the results add to the current literature base. Previous researchers have demonstrated that

there are strong links between parental stress and childhood psychopathology and cognitive distortions and stress; however the current study provides insight into how the three factors are specifically related. Understanding the underlying factors that lead to high levels of parental stress and psychopathology will ultimately better guide the treatment of parents with high levels of stress and who are at risk for maladaptive parenting behaviors.

The secondary purpose of the study was to investigate the relationship between cognitive distortions and specific parent factors, such as perceived competency and depressive symptoms in a parent population. It was hypothesized that cognitive distortions would be highly correlated with both depressive symptoms and perceived levels of competency. Based on the results of the study, both hypotheses were supported and provide further empirical support for the cognitive model of depression and competency. The study also, however, provides empirical support on how specific parental characteristics such as depression and competence are related to distorted thinking. Both these factors have been linked in the previous literature to increased risk for child abuse and neglect and other maladaptive parenting behaviors. Decreasing depressive symptoms and increasing competency should lead to a decrease in maladaptive parenting behaviors.

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